



STRATEGIC DEPLOYMENT PLANNING COURSE

RAIL DEPLOYMENT OPERATIONS, EQUIPMENT CHARACTERISTICS AND CAPABILITIES



**SURFACE TRANSPORTATION BY ORGANIC
TRANSPORTATION ASSETS IS NORMALLY
DICTATED FOR MOVEMENT FROM HOME
STATION TO MOB STATION.... AND FROM
INSTALLATION TO PORTS OF EMBARKATION.
BUT**

**WHAT IF UNIT EQUIPMENT
IS NON-ROADABLE?..OR
IS BEYOND ORGANIC LIFT
CAPABILITY.... OR IS
BEYOND 400 MILE MOTOR
MARCH CRITERIA?**



**...THEN YOU MUST DEPEND UPON COMMERCIALY
PROVIDED SERVICE**

..... LIKE RAIL!

Types of Roads

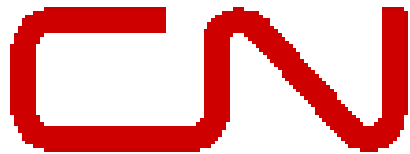
- **UTILITY RAIL LINE**

**SERVES INSTALLATIONS.
CONDUCTS YARD OPERATIONS
PERFORMS SWITCHING,
PICKS UP & DELIVERS RAILCARS**



- **COMMERCIAL RAIL LINE**

LINE HAUL OPERATIONS



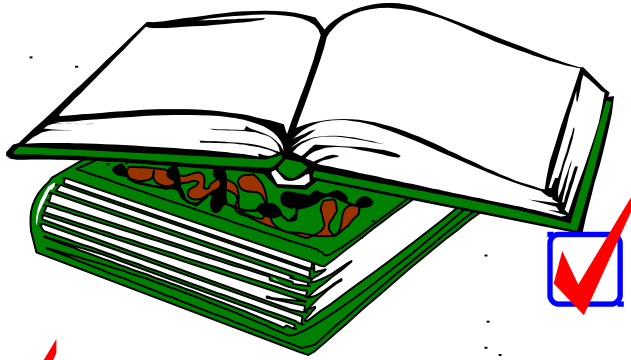
Association of American Railroads

BNSF



**CSX
CORPORATION**

Doctrine



AAR LOADING RULES, SECTION 6



**MTMCTEA PAM 55-19, "TIEDOWN HANDBOOK
FOR RAIL MOVEMENTS"**



**TM 55-2200-001-12, "APPLICATION OF
BB & T MATERIALS FOR RAIL TRANSPORT"**

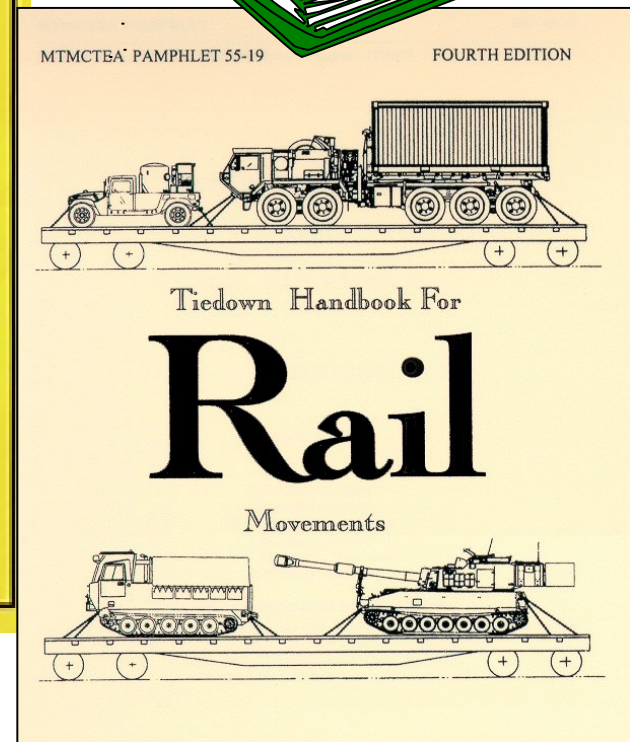
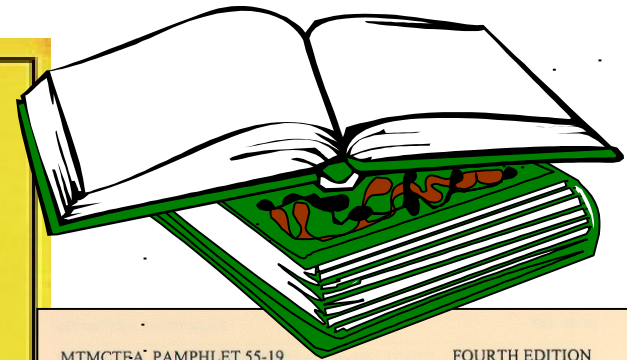
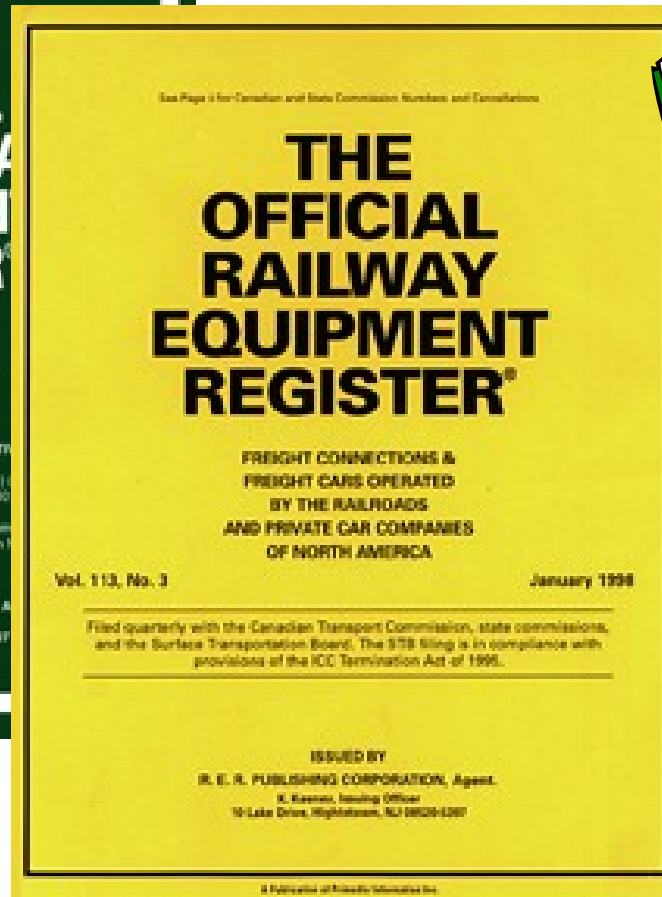


**FM 55-17, "TERMINAL OPERATIONS
COORDINATOR HANDBOOK"**



**THE OFFICIAL RAILWAY EQUIPMENT
REGISTER**

References



.....AND DON'T FORGET THE TMs, TBs,
AND TRANSPORTABILITY GUIDANCE MANUALS FOR
PARTICULAR PIECES OF EQUIPMENT

Responsibilities



SHIPPER/UNIT



INSTALLATION TRANSPORTATION OFFICER



DIRECTOR OF PUBLIC WORKS



INTERCHANGE CARRIER



Responsibilities - Unit Commander

ADVANCED PLANNING

- ✓ **AUEL TO DEL**
- ✓ **UNIT MOVEMENT PLAN**
- ✓ **CALCULATIONS OF BBM**

LOADING OF EQUIPMENT

- ✓ **COORDINATION OF
SUPPORT FUNCTIONS**
- ✓ **LOADING ACTIVITIE**
- ✓ **INSPECTIONS**



ITO Coordination

MAINTAINS FILE OF UNIT AUEL & UPDATES

TC-ACCIS USED TO PREPARE GBL (FROM D

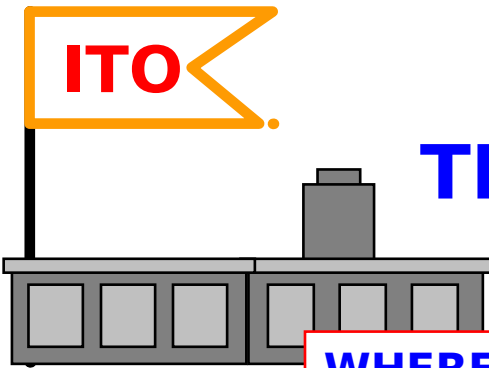
LIAISON WITH MTMC & RAILWAY AGENT

**PROVIDES HAZMAT DOCUMENTATION
AS REQUIRED**

TECHNICAL ADVICE ON BBTM

COORDINATES LOADING

SITE ACTIVITIES



**WHERE THE.....
"RUBBER MEETS THE ROAD"**

Ordering of Railcars

**RAILCARS ARE ORDERED IN THE
TYPES AND QUANTITIES REQUIRED,
BASED UPON THE DEPLOYING UNIT'S
DEPLOYMENT REQUIREMENTS**

OPEN CARS - FLATCARS & GONDOLAS

CLOSED CARS - BOXCARS

SPECIALTY CARS - MULTILEVEL

**DEPLOYMENT MAY BE HEAVY-LIFT
ON COMMERCIAL RAIL CABOOSE
OR "DODX"  TOFC
Etc....**

Railcars During DS/DS

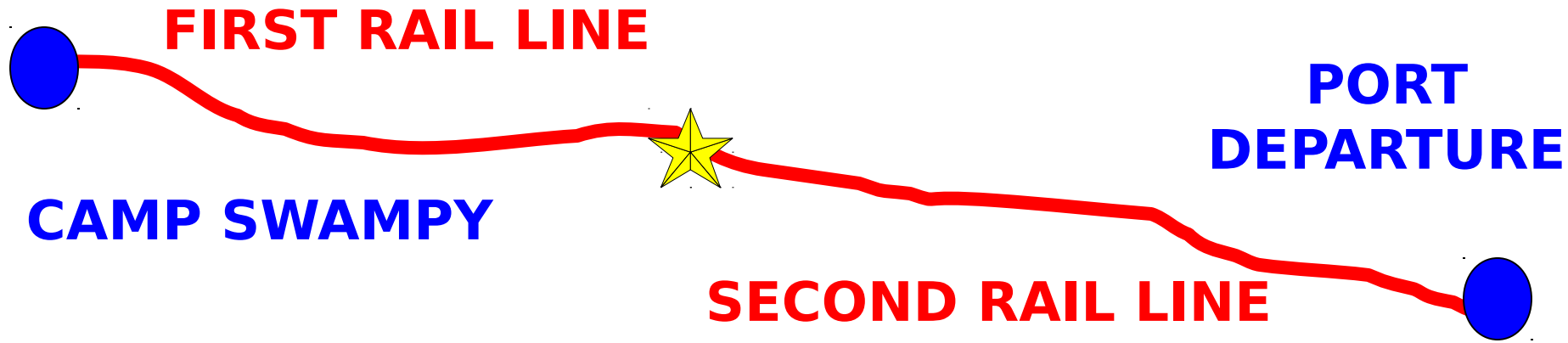
**OF THE RAILCARS USED DURING THE
DEPLOYMENT FOR THE DESERT TWINS
95% WERE STANDARD AND MULTILEVEL
FLATCARS.....**

**.....OF THESE FLATCARS, 98%
WERE CHAIN TIEDOWN FLATS**



**FUTURE: RAILCAR DEMAND
MAY INCREASE AND THERE
MAY NOT BE SUFFICIENT
CHAIN TIEDOWN CARS
AVAILABLE**

ITO Requests Routing FOR SHIPMENT FROM SDDC



**SDDC OBTAINS ROUTING
FROM RAIL LINE SELECTED**

**ALTHOUGH THE UNITS
HAVE THE OBLIGATION
TO PREPARE UNIT
EQUIPMENT FOR RAIL
SHIPMENT & LOAD
RAILCARS**



**....THE LOADING IS
PERFORMED UNDER
THE....**

TECHNICAL SUPERVISION OF THE ITO.

**ALSO, THE ITO SHOP IS AUGMENTED DURING PERIOD
OF MOBILIZATION BY TEAMS FROM A UNIQUE USA
ORGANIZATION**

THE DEPLOYMENT SUPPORT BRIGADE (DS

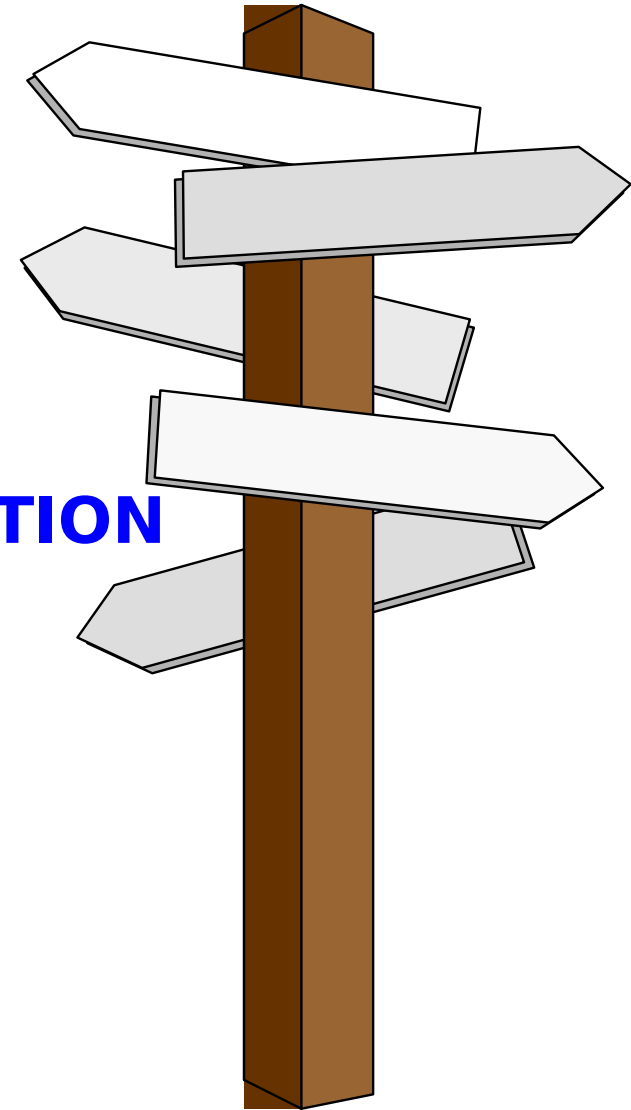
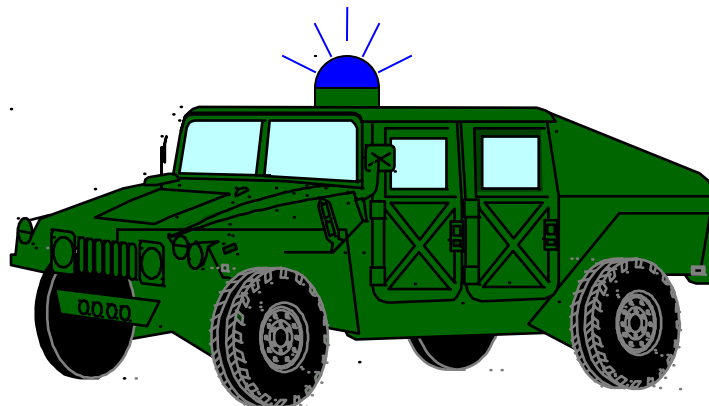
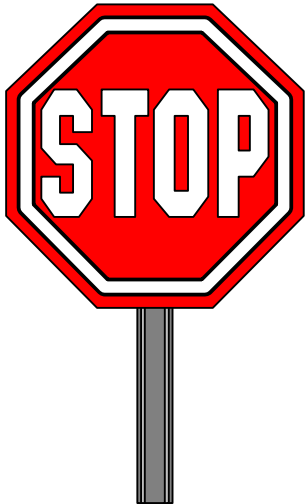
Traffic Pattern

ACCESS TO LOADING SITE

DISTANCE

HOURS OF OPERATION

MP SUPPORT



Rail Site Preparation

**THE SITE SHOULD BE
WELL LIT, FREE OF
DEBRIS, AND CLEAN**



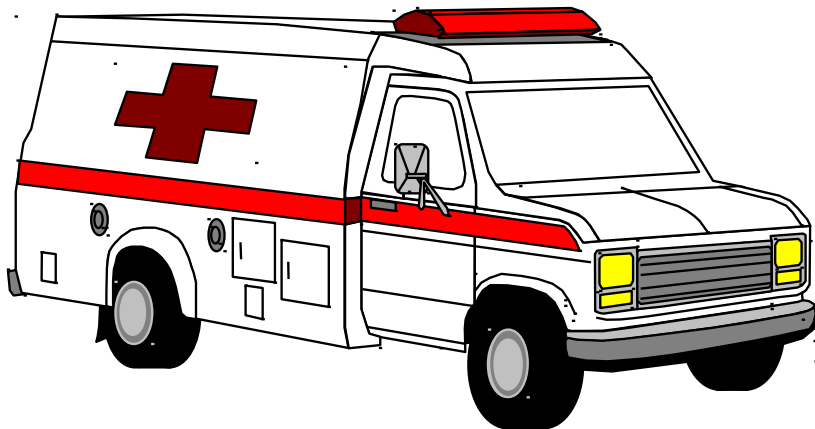
**THE ITO IS TASKED TO
INSPECT RAIL CARS FOR SERVICEABILITY & CLEANLINESS**

**RAILCARS SHOULD BE PROPERLY STAGED/POSITIONED
SPANNERS & SUPPORT EQUIPMENT READILY AVAILABLE**

.....AND WHAT OTHER SUPPORT IS NECESSARY

Rail Site Facilities

- ☒ **COMMAND AND CONTROL FACILITIES**
- ☒ **LIGHTING**
- ☒ **LATRINE FACILITIES**
- ☒ **MESSING/REFRESHMENTS**
- ☒ **MEDICAL SUPPORT**



Department of Public Works

(POST ENGINEERS)

Department of Public Works (cont)

**PROVIDES B & B
MATERIALS FOR
DEPLOYING UNITS**

**DEPLOYING UNITS
MUST DETERMINE
REQUIREMENTS &
PROVIDE TO THE
DPW IN ADVANCE**



Tools for Rail Loading



**WIRE ROPE,
CABLE,
CHAIN**

**CHAIN HOISTS
CABLE GRIPPERS
TURNBUCKLES
SOCKETS**

PLUS ...

**TAPE MEASURES
WIRE CUTTERS
HAMMERS
SCREW DRIVERS
BREAKER BARS
WORK GLOVES
etc.**

Rail Carrier Representative

**JOINT INSPECTION BEFORE CARS POSITIONED AT RA
INSPECTION FOLLOWING LOADING TO ENSURE...**

**.....COMPLIANCE WITH APPLICAB
ARMY AND AAR LOADING RULES**

 **LOADS DO NOT EXCEED LIMITS**

 **PROPER WEIGHT DISTRIBUTION**

 **CARGO SECURED ACCORDING TO AAR RULE**

 **HEIGHT & WIDTH OF LOAD**

WITHIN CLEARANCE LIMITS

**ALL EQUIPMENT LOADED MUST BE PROPERLY SECURED
TO COUNTERACT LONGITUDINAL, LATERAL, AND
VERTICAL FORCES**



FINAL AUTHORITY, RESPONSIBILITY!

An aerial photograph of a vast rail yard, densely packed with hundreds of freight cars in various colors including red, blue, green, and orange. The cars are organized into long, parallel rows, creating a complex grid-like pattern. In the center of the image, a white rectangular box with a blue border contains the title text. The background shows the intricate network of tracks and the sheer volume of industrial equipment.

CLASSES OF RAIL EQUIPMENT

CLASSES OF RAIL EQUIPMENT



PASSENGER

USED TO TRANSPORT PERSONNEL:

- COACH**
 - SLEEPER**
 - BAGGAGE**
 - DINING**

Classes of Rail Equipment



FREIGHT

USED TO TRANSPORT GENERAL CARGO

THE COMMODITY DICTATES TYPE OF CAR:

BOXCAR: BULK ITEMS REQUIRING PROTECTION

FLATCAR: OVERSIZE, PROTECTION NOT ISSUED

GONDOLA: BULK, REQUIRING SIDE BOARDS

HOPPER: BULK SOLIDS, NEED PROTECTION

TANKCAR: BULK LIQUIDS

REFRIGERATOR CAR: REQUIRES TEMP CONTROL

CLASSES OF RAIL EQUIPMENT

SPECIAL

USED FOR SPECIAL PURPOSES:

- **LOCOMOTIVES**
 - **CABOOSES**
 - **TRACK MAINTENANCE**
 - **PLOWS, CRANES, etc....**



Boxcars

**US BOXCARS IN
DOMESTIC SERVICE
HAVE A CAPACITY OF
ABOUT 100K LB. OR
OVER 3900 CU FEET**



**IDEAL FOR COMMODITIES REQUIRING PROTECTION
FROM WEATHER OR SUSCEPTIBLE TO PILFERAGE:
FOODSTUFFS, MEDICINES, ELECTRONICS, SPARE PARTS**

Boxcars (2)



**BOXCARS HAVE
INSIDE DIMENSION
OF ABOUT
50 LONG X 9 WIDE
X 10 HIGH**

**ALTHOUGH THERE
ARE "WIDE MOUTH
BOXCARS, MOST
HAVE DOOR
DIMENSIONS OF
ABOUT 10 FOOT
WIDE AND 8 HIGH
CLEAR OPENING**

Tank Cars

**TANK CARS ARE
NECESSARY TO
TRANSPORT BULK
POL, WATER,
CHEMICALS, AND
OTHER LIQUIDS**

**DOMESTIC TANK
CARS USUALLY
ARE 10K GAL.
OR MORE CAPACITY.**



Gondola Cars



**IF CAR SIDES ARE
NECESSARY TO
KEEP BULK LOADS
FROM SHIFTING,
GONDOLA CARS
ARE USED**

**FOR EXAMPLE: ENGINEERING MATERIALS, STEEL
AND OTHER METALS, CONEX CONTAINERS, Etc..**

Hopper Cars

**CARS CAN BE
EITHER COVERED
OR NOT COVERED**

**IDEAL FOR
TRANSPORTING
LOOSE BULK
COMMODITIES**



**HINGED DOORS IN FLOOR ALLOW BULK
MATERIALS TO BE DISCHARGED**

Flat Cars

**THE MOST VALUABLE
RAIL CARS FOR
TRANSPORTING
MILITARY CARGO
AND VEHICLES**

**EQUIPMENT
MAY BE CARRIED
ON DOD or
COMMON CARRIER
FLATCARS**



Flat Cars (2)



**VEHICLES ARE
LOADED BY THE
“CIRCUS” METHOD**

**UNIT EQUIPMENT IS LOADED BY A RAMP ABOARD THE
REARMOST RAIL CAR AND THEN CAREFULLY MOVED
FORWARD UNTIL ARRIVING AT THE REQUIRED LOCATION.
SPANNERS ALLOW THE MOVEMENT ACROSS GAPS.**



CONVENTIONAL FLAT CARS

CHAIN TIE-DOWN FLAT CARS



MULTI-LEVEL FLAT CARS



MULTI-LEVEL **FLAT CARS**



MULTILEVEL FLAT CARS



“TOFC”



“TOFC” **LOADING**



“COFC”





SPECIAL PURPOSES EQUIPMENT

SWITCH ENGINES



**USED SWITCH RAIL CARS
IN AND OUT OF A LOADING
AREA.**

**MOVE LOADED CARS TO
BE CONNECTED TO LINE
HAUL CARRIERS.**

Line Haul Locomotives



Maintenance of Way Equipment



CABOOSE



DEFENSE FREIGHT RAIL INTERCHANGE FLEET



...THE DFRIF

Army Strategic Mobility Program (ASMP)

DS/DS REVEALED “SEVEN DAY” DEFICIENCY

SOLUTION:

**PREPOSITION DOD RAIL CARS
APPROX 900 FLATS (1800 TOTAL)**

SDDC's FLEET

TOTAL RAIL FLEET: 1,758

BAYONNE, NJ

MCLB BARSTOV

43

FT. CARSON

85

FT. CAMPBELL

87

FT. BENNING

62 - 49

CAMP LEJEUNE

34

MCLB ALBANY

93-127

FT. BLISS

140

FT. HOOD

75 - 92

FT. STEWART

5

397 140 TON FLAT RAILCARS
495 100 TON FLAT RAILCARS
*** PRE-ASSIGNED IN ORDER TO**
RESPOND TO CONTINGENCIES

RAIL FLEET:

TANK CARS:	371
FLAT CARS:	1,340
BOX CARS:	30
REEFERS:	9
CABOOSES:	6
SCHNABEL:	2

68 FOOT FLAT CAR





89 FOOT RAIL CAR

Ownership Markings

“X” = PRIVATE OWNERSHIP

SUITABLE FOR INTERCHANGE SERVICE

GATX

HTTX

DODX

Loading Markings

LT WT - EMPTY WEIGHT

LD LMT - LOAD LIMIT OF CAPACITY

**NOW, YOUR
CHANCE TO CHECK
WHAT YOU HAVE LEARNED
ABOUT RAIL**



RAIL

OPERATIONS

**WHY IS THE MTMCTEA Pam 55-19 SO IMPORTANT?
WHAT ARE SOME FACILITIES THAT SHOULD BE
AT A RAIL LOAD SITE?**

**WHO IS RESPONSIBLE FOR ACTUALLY LOADING
UNIT EQUIPMENT ON RAIL CARS?**

**WHAT ORGANIZATION PROVIDES TECHNICAL
ASSISTANCE AT RAIL SITES?**

**WHAT TYPE OF CARGO WOULD YOU CARRY ON
FLAT CAR?... BOX CAR?... GONDOLA?
... TANK CAR?**

Wow! YOU REMEMBERED A WHOLE LOT!



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